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TEXTBOOK OF IMMUNOLOGY

Second Edition

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Preface to the Second Edition

We have made a series of changes in order to accommodate t of new information that became available during the last four As before, this book has been designed as an introductory textbc heavy emphasis on basic immunological phenomena. The major re concern the new information on immunoglobulin genes, the anal histocompatibility and the function of T cells. The latter twc ably the most difficult topics for the students, are pre: gradually, in four chapters. First, we present a general desc of the histocompatibility molecules and their genes (in Chap followed by their function in transplantation and physiological lar interactions (in Chapters 6, 7, and 8). Lastly, in Chapter describe the function of immune response genes as original covered.

We are grateful to our many colleagues who helped us wit advice and comments. To note is that Dr. Kurt J. Bloch revise Chapter 3, and, with Dr. Susan Canelosi, a great part of Cha Dr. K. F. Austen revised the complement chapter. Dr. F. S revised Chapter 15. Dr. Ronald N. Germain wrote parts of Chap We also acknowledge the help, in this second edition, of Drs. M Dorf, Edmond J. Yunis, and Elvin Kabat. Both George F. Schrei F. S. Rosen read most of the chapters and provided considerable editorial and scientific matters. We are grateful to Battaglino, who drew all the new graphs of this edition. Fina owe a great deal to Barbara K. Gricus, who typed the whole b also helped us with editorial matters.

Emil R. Unanue

Baruj Benacerraf

Boston, Massachusetts
November, 1983

prolongation of allograft or tumor survival by specific against the foreign tissue.

erminant, usually one that occurs many times on the same ee Hapten, Determinant, and Antigen).

a product of papain digestion of immunoglobulins with light chain and part of one heavy chain. Fab fragments mbining site for antigen.

t of pepsin digestion of immunoglobulin with two intact s and parts of two heavy chains and two combining sites but lacking the Fc region.

a product of papain digestion of immunoglobulin with wo heavy chains and no combining sites for antigen. nt has sites for activation of complement and for the immunoglobulins to macrophages, lymphocytes, and mast is responsible for many biological functions of

protein on the surface of most lymphocytes and phago- to bind the Fc portion of immunoglobulins of the IgG

rcumscribed region in lymphoid tissue, in the super- ex of lymph nodes, containing mostly B cells.

globulins with slow electrophoretic mobility in the n, includes most of the immunoglobulin molecules. This etimes used to refer to all immunoglobulins of various

of a large number of serum proteins distinct from insoluble at high salt concentrations.

Reaction (GVH): the pathological reactions caused by ion of immunocompetent T lymphocytes to an incompetent host is unable to reject the T lymphocytes and becomes f attack by them.

istocompatbility complex in the mouse.

loci in the MHC coding for Class I histocompatibility hat are responsible for the rapid rejection of allo- that serve as targets for T cell cytolysis in physio- ractions.

Hapten: chemically defined determinant that, when conjugated to an immunogenic carrier, stimulates the synthesis of specific antibody. It is capable of binding to antibody but cannot by itself stimulate an immune response.

Heavy Chain: the higher molecular weight polypeptide chain in an immunoglobulin molecule and the one determining the class of the immunoglobulin.

Helper Cells: a class of T cells that are necessary to help B cells produce antibody to thymus-dependent antigens.

Heterologous: originating from a different individual or a different inbred line; sometimes applied to a different carrier molecule (see Isologous).

Histocompatibility Antigens: cell surface antigens characteristic of an individual or an inbred line that regulate the interactions of T lymphoyctes and also stimulate the rejection of tissue allografts.

HLA: the major histocompatibility complex in man.

HLA-A, HLA-B, HLA-C: three distinct genetic loci in the MHC of man coding for Class I major histocompatibility antigens.

HLA-D: a region of the MHC of man coding for Class II antigens expressed primarily on B cells and macrophages.

Humoral Immunity: immune phenomena involving the production of specific antibody.

Hypersensitivity: a poor term yet widely used, usually applied to those immune phenomena that are damaging in some way to the host animal.

Hypervariable Region: defined portions of the variable region of either heavy or light immunoglobulin chains having extreme variability in amino acid sequence in different molecules. The antibody-combining site is made of the hypervariable regions.

Ia Antigens: histocompatibility antigens found on B cells, macrophages, T cells, and Langerhans cells of the skin. They are coded for in the I region of the MHC. The Ia antigens are the Class II molecules.

Incomplete Freund's Adjuvant (ICFA): Freund's adjuvant without mycobacteria.